

1 1. In a data center capable of communicating with a remote enterprise
2 network, a method for enabling a user to access network data of the remote enterprise
3 network through a data tunnel between the data center and the remote enterprise network
4 that operates as a virtual private network, the method comprising the acts of:

5 receiving a data request from the remote enterprise network;

6 in response to the data request, transmitting ongoing reply data to the
7 remote enterprise network, such that a data tunnel is established between the data
8 center and the remote enterprise network, the data tunnel operating as a virtual
9 private network;

10 receiving an access request to access network data of the remote enterprise
11 network from the user;

12 transmitting the access request to the remote enterprise network using the
13 data tunnel;

14 receiving the network data from the remote enterprise network in response
15 to the access request; and

16 transmitting the network data to the user.

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18 2. A method as defined in claim 1, wherein the data request is received by a
19 designated server, and wherein the designated server is one of multiple servers of the data
20 center.

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22 3. A method as defined in claim 2, wherein a database of the remote enterprise
23 network is notified which of the multiple servers is the designated server, the designated
24 server notifying the database when a data tunnel is established.

1 4. A method as defined in claim 3, wherein the access request is received by a
2 designated telephony node of the data center, and wherein the user generates the access
3 request using a telephone system.

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5 5. A method as defined in claim 3, wherein the access request is received by
6 one of multiple servers of the data center over the Internet, and wherein the access request
7 is generated by the user using a device connected to the Internet.

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9 6. A method as defined in claim 4, wherein the designated telephony node of
10 the data center transmits the access request to the designated server.

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12 7. A method as defined in claim 6, wherein the designated telephony node
13 determines which of the multiple servers is the designated server by communicating with
14 at least one of the multiple servers.

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16 8. A method as defined in claim 6, wherein the designated telephony node
17 determines which of the multiple servers is the designated server by communicating with
18 the database.

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20 9. A method as defined in claim 1, wherein the act of receiving an access
21 request to access network data of the remote enterprise network from the user further
22 comprises the act of authenticating the identity of the user.

1 10. A method as defined in claim 9, wherein authenticating the identity of the
2 user comprises the act of receiving a valid personal identification number.

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4 11. A method as defined in claim 4, wherein the act of transmitting the network
5 data to the user includes the acts of:

6 transmitting the network data from the designated server to the designated
7 telephony node; and

8 transmitting the network data from the designated telephony node to the
9 telephone system used by the user.

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11 12. A method as defined in claim 5, wherein the act of transmitting the network
12 data to the user includes the act of transmitting the network data from the designated server
13 to the device that is connected to the Internet.

1 13. In an enterprise network capable of communicating with a remote data
2 center network, a method for enabling a user to access network data of the enterprise
3 network through a data tunnel between the remote data center and the enterprise network
4 that operates as a virtual private network, the method comprising the acts of

5 transmitting a data request to the remote data center;

6 receiving ongoing reply data from the remote data center in response to the
7 data request, such that a data tunnel is established between the remote data center
8 and the enterprise network, the data tunnel operating as a virtual private network;

9 receiving, from the remote data center, an access request to access network
10 data of the enterprise network, the access request having been received by the
11 remote data center from the user and thereafter transmitted by the remote data
12 center to the enterprise network through the data tunnel; and

13 in response to the access request, transmitting the network data to the
14 remote data center such that the user is enabled to access the network data.

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16 14. A method as defined in claim 13, wherein the data request includes a
17 uniform resource identifier.

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19 15. A method as defined in claim 13, wherein the data request is transmitted
20 through a firewall.

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22 16. A method as defined in claim 15, wherein the data request is transmitted
23 through a proxy server.

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1 17. A method as defined in claim 13, wherein the reply data is received through
2 port 443.

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4 18. A method as defined in claim 17, wherein the reply data is received using
5 Secure Sockets Layer protocol.

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7 19. A method as defined in claim 13, wherein the reply data is received through
8 port 80.

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10 20. A method as defined in claim 13, wherein the act of transmitting the
11 network data to the remote data center includes the acts of:

12 encrypting the network data to comply with Secure Sockets Layer protocol,

13 transmitting the network data to the remote data center through a second
14 data tunnel, such that the transmission of the network data operates as a temporary
15 virtual private network; and

16 closing the second data tunnel.

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18 21. A method as defined in claim 13, wherein upon receiving the access
19 request, the method further comprises the act of:

20 performing an act upon the network data.

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22 22. A method as defined in claim 21, wherein performing an act upon the
23 network data includes retrieving email message data.

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1 23. In a data center capable of communicating with a remote enterprise
2 network, a method for enabling a user to access network data of the remote enterprise
3 network through a data tunnel between the data center and the remote enterprise network
4 that operates as a virtual private network, the method comprising the acts of:

5 receiving, from the remote enterprise network, a uniform resource identifier
6 associated with a resource of a server of the data center;

7 in response to receiving the uniform resource identifier, invoking the
8 resource to generate ongoing reply data and transmitting the ongoing reply data to
9 the remote enterprise network, such that a data tunnel is established between the
10 data center and the remote enterprise network in response to an action of the remote
11 enterprise network, the data tunnel operating as a virtual private network;

12 receiving an access request to access network data of the remote enterprise
13 network from the user;

14 as the ongoing reply data is being transmitted to the remote enterprise
15 network, inserting the access request into the ongoing reply data and transmitting
16 the access request to the remote enterprise network using the data tunnel;

17 receiving the network data from the remote enterprise network in response
18 to the access request; and

19 transmitting the network data to the user.
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21 24. A method as defined in claim 23, wherein the act of receiving the network
22 data from the remote enterprise network comprises the act of receiving through a second
23 data tunnel the network data from the remote enterprise network, the second data tunnel
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1 operating as a temporary virtual private network is closed after the network data is received
2 by the data center.

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4 25. A method as defined in claim 23, wherein the act of transmitting the access
5 request to the remote enterprise network comprises the act of transmitting the access
6 request using Secure Sockets Layer protocol.

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8 26. A method as defined in claim 23, wherein the act of receiving an access
9 request to access network data of the remote enterprise network from the user further
10 comprises the act of authenticating the identity of the user.

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12 27. A method as defined in claim 26, wherein authenticating the identity of the
13 user comprises the act of receiving a valid personal identification number.

1 28. A computer program product for implementing in a data center a method
2 for enabling a user to access network data of a remote enterprise network through a data
3 tunnel between the data center and the remote enterprise network that operates as a virtual
4 private network, the computer program product comprising:

5 a computer-readable medium carrying computer-executable instructions for
6 implementing the method, the computer-executable instructions comprising:

7 program code means for receiving a data request from the remote
8 enterprise network;

9 program code means for transmitting, in response to the data
10 request, ongoing reply data to the remote enterprise network, such that a
11 data tunnel is established between the data center and the remote enterprise
12 network, the data tunnel operating as a virtual private network;

13 program code means for receiving an access request to access
14 network data of the remote enterprise network from the user;

15 program code means for transmitting the access request to the
16 remote enterprise network using the data tunnel;

17 program code means for receiving the network data from the remote
18 enterprise network in response to the access request; and

19 program code means for transmitting the network data to the user.
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21 29. A computer program product as defined in claim 28, wherein the computer-
22 executable instructions further comprise program code means for authenticating the
23 identity of the user.
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1 30. A computer program product as defined in claim 28, wherein the computer-
2 executable instructions further comprise program code means for enabling telephony nodes
3 of the data center to receive the access request and to transmit the access request to a
4 designated server, wherein the designated server is transmitting the ongoing reply data to
5 the remote enterprise network.

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7 31. A computer program product as defined in claim 30, wherein the designated
8 server is one of multiple servers of the data center, and wherein the user generates the
9 access request using a telephone system.

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11 32. A computer program product as defined in claim 28, wherein the computer-
12 executable instructions further comprise program code means for caching a copy of
13 network data in a database of the data center.

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15 33. A computer program product as defined in claim 32, wherein the computer-
16 executable instructions further comprise program code means for transmitting the cached
17 copy of the network data to the user in response to receiving the access request from the
18 user.

1 34. In an enterprise network capable of communicating with a remote data
2 center, a method for enabling a user to manipulate network data of the enterprise network
3 through a data tunnel between the remote data center and the enterprise network that
4 operates as a virtual private network, the method comprising the acts of

5 transmitting a data request to the remote data center;

6 receiving ongoing reply data from the remote data center in response to the
7 data request, such that a data tunnel is established between the remote data center
8 and the enterprise network, the data tunnel operating as a virtual private network;

9 receiving, from the remote data center, a user request for an act to be
10 performed on network data of the enterprise network, the user request having been
11 received by the remote data center from the user and thereafter transmitted by the
12 remote data center to the enterprise network through the data tunnel; and

13 upon receiving the user request, performing the act on network data of the
14 enterprise network.

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16 35. A method as defined in claim 32, wherein performing an act upon the
17 network data includes deleting email.

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19 36. A method as defined in claim 33, wherein performing an act upon the
20 network data includes faxing the network data to the user.

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22 37. A method as defined in claim 33, wherein performing an act upon the
23 network data includes retrieving a web page.

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38. A method as defined in claim 33, wherein performing an act upon the network data includes retrieving email messages.

1 39. In a data center capable of communicating with a remote enterprise
2 network, a method for enabling a user to access network data of the remote enterprise
3 network through a data tunnel between the data center and the remote enterprise network
4 that operates as a virtual private network, the method comprising the acts of:

5 receiving network data from the remote enterprise network through a
6 temporary data tunnel that is established between the data center and the remote
7 enterprise network, the temporary data tunnel operating as a virtual private
8 network;

9 caching a copy of the network data in a database of the data center;

10 receiving an access request to access network data of the remote enterprise
11 network from the user;

12 retrieving the network data from the database in response to the access
13 request; and

14 transmitting the network data to the user.

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16 40. A method as defined in claim 39, wherein the network data of the enterprise
17 network is disconnected from the enterprise network after the network data is received by
18 the data center.

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20 41. A method as defined in claim 39, wherein the network data of the enterprise
21 network is disconnected from the user after the network data is received by the data center.

1 42. A method as defined in claim 39, wherein the user determines what network
2 data is transmitted to the data center, and wherein the user determines what network data is
3 cached in the database.
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5 43. A method as defined in claim 39, wherein the act of receiving an access
6 request to access network data of the remote enterprise network from the user further
7 comprises the act of authenticating the identity of the user.
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9 44. A method as defined in claim 39, wherein the access request comprises a
10 command to update network data.
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12 45. A method as defined in claim 44, further comprising the acts of updating
13 the cached copy of network data, and transmitting update information to the enterprise
14 network within the ongoing reply data.
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